ACE
Engineering College
An AUTONOMOUS Institutio

Ghatkesar, Medchal (Dist), Hyderabad, Telangana State – 501 301

(NBA Accredited B.Tech Courses Accredited NAAC with A Grade 3.20 CGPA)

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DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

II YEAR I SEMESTER, COURSE STRUCTURE

S. No.	Course Code	Course Title	% Deviation	L	T	P	Credits
1	CS301PC	Discrete Mathematics	3%	3	0	0	3
2	CS302PC	Data Structures	0	3	1	0	4
3	MA305BS	Mathematical and Statistical Foundations	0	3	0	0	3
4	CS304PC	Computer Organization and Architecture	0	3	0	0	3
5	CS310PC	Advanced Python Programming	New	2	0	0	2
6	SM302MS	Business Economics & Financial Analysis	0	3	0	0	3
7	CS307PC	Data Structures Lab	0	0	0	3	1.5
8	CS311PC	Advanced Python Programming Lab	New	0	0	3	1.5
9	MC309HS	Gender Sensitization Lab	0	0	0	2	0
		Total Credits		**17**	**1**	**8**	**21**

CS301PC/ CS401PC: DISCRETE MATHEMATICS

<table>
<tr><td colspan="8">B.Tech. II Year I Semester</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">Category</td><td colspan="3">Hours/Week</td><td>Credits</td><td colspan="3">Maximum Marks</td></tr>
<tr><td colspan="2" rowspan="2">CS301PC/ CS401PC</td><td colspan="2" rowspan="2">PCC</td><td>L</td><td>T</td><td>P</td><td>C</td><td>CIA</td><td>SEE</td><td>Total</td></tr>
<tr><td>3</td><td>0</td><td>0</td><td>3</td><td>30</td><td>70</td><td>100</td></tr>
<tr><td colspan="2">Contact Classes: 45</td><td colspan="2">Tutorial Classes: 0</td><td colspan="3">Practical Classes: 0</td><td colspan="3">Total Classes: 45</td></tr>
<tr><td colspan="8">Prerequisite:</td></tr>
<tr><td colspan="8">Course Objectives:
• Introduces the elementary discrete mathematics for computer science andengineering.
• Topics include formal logic notation, methods of proof, induction, sets, relations, graph theory, permutations and combinations, counting principles; recurrence relations and generating functions.</td></tr>
<tr><td colspan="8">Course Outcomes:
• Ability to understand and construct precise mathematicalproofs
• Ability to use logic and set theory to formulate precise statements
• Ability to analyze and solve counting problems on finite and discretestructures
• Ability to describe and manipulatesequences
• Ability to apply graph theory in solving computingproblems</td></tr>
<tr><td colspan="2">Unit - 1</td><td colspan="4">The Foundations: Logic and Proofs</td><td colspan="3">No. of Classes:9</td></tr>
<tr><td colspan="8">The Foundations: Logic and Proofs: Propositional Logic, Applications of Propositional Logic, Propositional Equivalence, Predicates and Quantifiers, Nested Quantifiers, Rules of Inference, Introduction to Proofs, Proof Methods and Strategy.</td></tr>
<tr><td colspan="2">Unit - 2</td><td colspan="4"></td><td colspan="3">No. of Classes:9</td></tr>
<tr><td colspan="8">Basic Structures, Sets, Functions, Sequences, Sums, Matrices and Relations Sets, Functions, Sequences & Summations, Cardinality of Sets and Matrices Relations, Relations and Their Properties, n-ary Relations and Their Applications, Representing Relations, Closures of Relations, Equivalence Relations, PartialOrderings.</td></tr>
<tr><td colspan="2">Unit - 3</td><td colspan="4">Algorithms, Induction and Recursion</td><td colspan="3">No. of Classes:8</td></tr>
<tr><td colspan="8">Algorithms, The Growth of Functions, Complexity of Algorithms
Induction and Recursion: Mathematical Induction, Strong Induction and Well-Ordering, Recursive Definitions and Structural Induction, Recursive Algorithms, Program Correctness</td></tr>
<tr><td colspan="2">Unit - 4</td><td colspan="4">Discrete Probability and Advanced Counting Techniques</td><td colspan="3">No. of Classes:10</td></tr>
<tr><td colspan="8">Discrete Probability and Advanced Counting Techniques : An Introduction to Discrete Probability, Probability Theory, Bayes' Theorem, Expected Value and Variance
Advanced Counting Techniques: Solving Linear Recurrence Relations, Divide-and-Conquer Algorithms and Recurrence Relations, Generating Functions, Algebraic Structures, Semi-group and Monoids, Group Theory, Residue Arithmetic.</td></tr>
<tr><td colspan="2">Unit - 5</td><td colspan="4">Graphs</td><td colspan="3">No. of Classes:9</td></tr>
<tr><td colspan="8">Graphs: Graphs and Graph Models, Graph Terminology and Special Types of Graphs,</td></tr>
</table>

Representing Graphs and Graph Isomorphism, Connectivity, Euler and Hamilton Paths, Shortest-Path Problems, Planar Graphs, Graph Coloring.

Trees: Introduction to Trees, Applications of Trees, Tree Traversal, Spanning Trees, Minimum Spanning Trees

Text Books:

1. Discrete Mathematics and its Applications with Combinatorics and Graph Theory- Kenneth H Rosen, 7th Edition, TMH.

Reference Books:

1. Discrete Mathematical Structures with Applications to Computer Science-J.P. Tremblay and R. Manohar, TMH,
2. Discrete Mathematics for Computer Scientists & Mathematicians: Joe L. Mott, Abraham Kandel, Teodore P. Baker, 2nd ed, Pearson Education.
3. Discrete Mathematics- Richard John sonbaugh, 7th Edn., Pearson Education.
4. Discrete Mathematics with Graph Theory- Edgar G. Goodaire, Michael M.Parmenter.
5. Discrete and Combinatorial Mathematics - an applied introduction: Ralph. P. Grimald, 5th edition, Pearson Education.

Web References:

E-Text Books:

CS302PC: DATA STRUCTURES

<table>
<tr><td colspan="8">B.Tech. II Year I Semester</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">Category</td><td colspan="3">Hours/Week</td><td>Credits</td><td colspan="3">Maximum Marks</td></tr>
<tr><td colspan="2" rowspan="2">CS302PC</td><td colspan="2" rowspan="2">PCC</td><td>L</td><td>T</td><td>P</td><td>C</td><td>CIA</td><td>SEE</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>0</td><td>4</td><td>30</td><td>70</td><td>100</td></tr>
<tr><td colspan="2">Contact Classes: 45</td><td colspan="2">Tutorial Classes:15</td><td colspan="3">Practical Classes: Nil</td><td colspan="3">Total Classes: 60</td></tr>
<tr><td colspan="8">Prerequisite: A course on “Programming for Problem Solving”.</td></tr>
<tr><td colspan="8">Course Objectives:
• Exploring basic data structures such as stacks and queues.
• Introduces a variety of data structures such as hash tables, search trees, tries, heaps, graphs.
• Introduces sorting and pattern matching algorithms</td></tr>
<tr><td colspan="8">Course Outcomes:
• Ability to select the data structures that efficiently model the information in a problem.
• Ability to assess efficiency trade-offs among different data structure implementations or combinations.
• Implement and know the application of algorithms for sorting and pattern matching.
• Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees.</td></tr>
<tr><td colspan="2">Unit -1</td><td colspan="4">Introduction to Data Structures</td><td colspan="3">No. of Classes: 12</td></tr>
<tr><td colspan="8">Abstract data types, Linear list – singly linked list implementation, insertion, deletion and searching operations on linear list, Stacks-Operations, linked list representations of stacks, stack applications, Queues-operations, linked list representations of Queue.</td></tr>
<tr><td colspan="2">Unit -2</td><td colspan="4">Dictionaries & Hash Table Representation</td><td colspan="3">No. of Classes: 12</td></tr>
<tr><td colspan="8">Linear list representation, skip list representation, operations - insertion, deletion and searching.
Hash functions, collision resolution-separate chaining, open addressing-linear probing, quadratic probing, double hashing, rehashing, extendible hashing.</td></tr>
<tr><td colspan="2">Unit -3</td><td colspan="4">Search Trees:</td><td colspan="3">No. of Classes: 12</td></tr>
<tr><td colspan="8">Binary Search Trees, Definition, Implementation, Operations- Searching, Insertion and Deletion, AVL Trees, Definition, Height of an AVL Tree, Operations – Insertion, Deletion and Searching, Red –Black, Splay Trees.</td></tr>
<tr><td colspan="2">Unit -4</td><td colspan="4">Graphs & Sorting</td><td colspan="3">No. of Classes: 12</td></tr>
<tr><td colspan="8">Implementation Methods. Graph Traversal Methods.
Heap Sort, External Sorting- Model for external sorting, Merge Sort.</td></tr>
<tr><td colspan="2">Unit -5</td><td colspan="4">Pattern Matching and Tries</td><td colspan="3">No. of Classes: 12</td></tr>
<tr><td colspan="8">Pattern matching algorithms-Brute force, the Boyer –Moore algorithm, the Knuth-Morris-Pratt algorithm, Standard Tries, Compressed Tries, Suffix tries.</td></tr>
</table>

Text Books:

1. Fundamentals of Data Structures in C, 2nd Edition, E. Horowitz, S. Sahni and Susan Anderson Freed, *UniversitiesPress*.
2. Data Structures using C – A. S. Tanenbaum, Y. Langsam, and M.J. Augenstein, *PHI/Pearson Education*.

Reference Books:

1. Data Structures: A Pseudocode Approach with C, 2nd Edition, R. F. Gilberg and B.A. Forouzan, CengageLearning.

Web References:

E-Text Books:

MA305BS: MATHEMATICAL AND STATISTICAL FOUNDATIONS

B.Tech. II Year I Semester								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
MA305BS	**BSC**	3	1	-	4	30	70	100
Contact Classes: 45	**Tutorial Classes: 15**	**Practical Classes: Nil**				**Total Classes: 60**		

Prerequisite: Mathematics courses of first year of study.

Course Objectives: To learn

- The Number Theory basic concepts useful for cryptographyetc
- The theory of Probability, and probability distributions of single and multiple randomvariables
- The sampling theory and testing of hypothesis and makinginferences
- Stochastic process and Markovchains.

Course Outcomes: After learning the contents of this paper the student must be able to

- Apply the number theory concepts to cryptographydomain
- Apply the concepts of probability and distributions to some casestudies
- Correlate the material of one unit to the material in otherunits
- Resolve the potential misconceptions and hazards in each topic ofstudy.

Unit - 1	**Greatest Common Divisors and Prime Factorization**	**No.of Classes: 09(L), 03(T)**

Greatest common divisors, The Euclidean algorithm, The fundamental theorem of arithmetic, Factorization of integers and the Fermat numbers

Congruences: Introduction to congruences, Linear congruences, The Chinese remainder theorem, Systems of linear congruences..

Unit - 2	**Simple Linear Regression and Correlation**	**No.of Classes: 09(L), 03(T)**

Introduction to Linear Regression, The Simple Linear Regression Model, Least Squares and the Fitted Model, Properties of the Least Squares Estimators, Inferences Concerning the Regression Coefficients, Prediction, Simple Linear Regression Case Study **Random Variables and Probability Distributions:** Concept of a Random Variable, Discrete Probability Distributions, Continuous Probability Distributions, Statistical Independence.

Discrete Probability Distributions: Binomial Distribution, Poisson distribution

Unit - 3	**Continuous Probability Distributions, Fundamental Sampling Distributions**	**No.of Classes: 09(L), 03(T)**

Continuous Probability Distributions: Normal Distribution, Areas under the Normal Curve, Applications of the Normal Distribution, Normal Approximation to the Binomial

Fundamental Sampling Distributions: Random Sampling, Sampling Distributions, Sampling Distribution of Means and the Central Limit Theorem, Sampling Distribution of S2, t–Distribution, F-Distribution.

Unit - 4	**Estimation & Tests of Hypotheses**	**No.of Classes: 09(L), 03(T)**

Introduction, Statistical Inference, Classical Methods of Estimation. Estimating the Mean, Standard Error of a Point Estimate, Prediction Intervals, Tolerance Limits, Estimating the Variance, Estimating a Proportion for single mean, Difference between Two Means, between Two Proportions for Two Samples and Maximum Likelihood Estimation.

Unit - 5	**Stochastic Processes and Markov Chains**	**No.of Classes: 09(L), 03(T)**

Stochastic Processes and Markov Chains: Introduction to Stochastic processes- Markov process. Transition Probability, Transition Probability Matrix, First order and Higher order Markov process, n-step transition probabilities, Markov chain, Steady state condition, Markov analysis.

1. Kenneth H. Rosen, Elementary number theory & its applications, sixth edition, Addison- Wesley, ISBN 9780-321-50031-1
2. Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye, Probability & Statistics for Engineers & Scientists, 9th Ed. PearsonPublishers.
3. S. D. Sharma, Operations Research, Kedarnath and Ramnath Publishers, Meerut,Delhi

Reference Books:

1. S C Gupta and V K Kapoor, Fundamentals of Mathematical statistics, Khannapublications
2. T.T. Soong, Fundamentals of Probability And Statistics For Engineers, John Wiley & Sons Ltd,2004.
3. Sheldon M Ross, Probability and statistics for Engineers and scientists, AcademicPress.

Web References:

1) **SWAYAM Online Courses https://storage.googleapis.com/uniquecourses/online.html**
2) **Directory of Open Access Journals https://doaj.org/**
3) **Springer Open Journals https://www.springeropen.com/journals**
4) **UG/PG MOOCs http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php**

E-Text Books:

1) **National Digital Library: https://ndl.iitkgp.ac.in/**
2) **NCERT Text Books http://ncert.nic.in/textbook/textbook.htm**
3) **Directory of Open Access Books https://www.doabooks.org/**

CS304PC: COMPUTER ORGANIZATION ANDARCHITECTURE

B.Tech. II Year I Semester								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
CS304PC	**PCC**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		3	0	0	3	30	70	100
Contact Classes: 50	**Tutorial Classes: 0**	**Practical Classes: 0**				**Total Classes: 50**		

Prerequisite: Nil

Course Objectives:

- Students should grasp the basic concepts of computer organization and microprocessors, and understand the key skills needed for constructing cost-effective computer systems.
- To familiarize the students with the assembly language programming and interfacing of microprocessors.

Course Outcomes:

At the end of the Course Student will be able to:

- Master the binary and hexadecimal number systems including computer arithmetic. (L1)
- Understand the basic components and the design of CPU, ALU , Memory and Control Unit.(L2)
- Analyze the instruction set, instruction formats and addressing modes of 8086 and select appropriate for solving real world problems.(L3)
- Apply knowledge and demonstrate programming proficiency using the various addressing modes and data transfer instructions of the target microprocessor.(L3)
- Design a pipeline for consistent execution of instructions with minimum hazards.(L4)

Unit - 1	**Digital Computers**	No.of Classes: 10

Introduction, Block diagram of Digital Computer, Definition of Computer Organization, Computer Design and Computer Architecture.

Register Transfer Language and Micro operations: Register Transfer language, Register Transfer, Bus and memory transfers, Arithmetic Micro operations, logic micro operations, shift micro operations, Arithmetic logic shift unit.

Basic Computer Organization and Design: Instruction codes, Computer Registers, Computer instructions, Timing and Control, Instruction cycle, Memory Reference Instructions, Input – Output and Interrupt. CISC Characteristics, RISC Characteristics.

Unit - 2	**Microprogrammed Control**	No.of Classes: 10

Control memory, Address sequencing, micro program example, design of control unit.

Central Processing Unit: General Register Organization, Stack Organization, Instruction Formats, Addressing modes, Data Transfer and Manipulation, Program Control Instructions, Zero, One, Two and Three address instructions.

Unit - 3	**Data Representation & Computer Arithmetic**	No.of Classes: 10

Data types, Complements, Fixed Point Representation, Floating Point Representation.

Addition and subtraction, multiplication Algorithms, Division Algorithms, Floating – point Arithmetic operations

Unit - 4	**Input-Output Organization**	No.of Classes: 10

Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt Direct memory Access.

Memory Organization: Memory Hierarchy, Main Memory, Auxiliary memory, Associate

Memory, Cache Memory.		
Unit - 5	**Pipeline and Vector Processing**	No.of Classes: 10
Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction Pipeline, RISC Pipeline, Vector Processing, Array Processor. **8086 Processor:** Register Organization of 8086, Architecture, PIN diagram, Minimum and Maximum Modes, Instruction formats, Addressing Modes, Instruction set, Assembler Directives and Operators. **Assembly Language Programming with 8086:** Assembly Language Example programs.		
Text Books: 1. Computer System Architecture – M. Moris Mano, Third Edition, Pearson/PHI.		
Reference Books: **1.** Computer Organization – Car Hamacher, ZvonksVranesic, SafeaZaky, VthEdition, McGraw Hill. 2. Computer Organization and Architecture – William Stallings Sixth Edition,Pearson/PHI. 3. Structured Computer Organization – Andrew S. Tanenbaum, 4thEdition,PHI/Pearson.		
Web References: 0. https://nptel.ac.in/courses/106/105/106105163/		
E-Text Books: 1.https://www.academia.edu/31003870/Computer_System_Architecture_3rd_Ed_by_M_Morris_Mano_text.pdf		

CS307PC: DATA STRUCTURESLAB

B.Tech. II Year I Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
CS307PC	PCC	0	0	3	1.5	30	70	100
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 45				Total Classes: 45		

Prerequisite: A Course on "Programming for problem solving".

Course Objectives:

- It covers various concepts of C programminglanguage
- It introduces searching and sortingalgorithms
- It provides an understanding of data structures such as stacks andqueues.

List of Experiments:

1. Write a program that uses functions to perform the following operations on singly linked list.:
   i) Creation ii)Insertion iii)Deletion iv)Traversal
2. Write a program that uses functions to perform the following operations on doubly linked list.:
   i) Creation ii)Insertion iii)Deletion iv)Traversal
3. Write a program that uses functions to perform the following operations on circular linked list.:
   i) Creation ii)Insertion iii)Deletion iv)Traversal
4. Write a program that implement stack (its operations)using
   i) Arrays ii)Pointers
5. Write a program that implement Queue (its operations)using
   i) Arrays ii)Pointers
6. Write a program that implements the following sorting methods to sort a given list of integers in ascendingorder
   i) Bubblesort ii)Selectionsort iii) Insertionsort
7. Write a program that use both recursive and non recursive functions to perform the following searching operations for a Key value in a given list ofintegers:
   i) Linearsearch ii) Binarysearch
8. Write a program to implement the tree traversalmethods.
9. Write a program to implement the graph traversalmethods.

List of Equipment/Software (with Specifications or Range) Required:

A Computer System with Ubuntu operating system and GCC Compiler

CS311PC: ADVANCED PYTHON PROGRAMMING LAB

B.Tech. II Year I Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
CS311PC	PCC	-	-	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Prerequisite:

1. A course on "Data Science, GUI and Web Programming".
2. A course on "Python Programming".

Course Objectives: At the end of the course students should be able to:

1. Manipulate and Analyze dataset.
2. Perform statistical analysis.
3. Effectively visualizing result.
4. Develop the skill of designing Graphical user Interfaces.
5. Develop Database Application.

List of Experiments:

LIST OF PROGRAMS:

1. Create Regular Expressions that
   a) Recognize following strings bit, but, bat, hit, hat or hut
   b) Match any pair of words separated by a single space, that is, first and last names.
   c) Match any word and single letter separated by a comma and single space, as in last name, first initial.
   d) Match simple Web domain names that begin with www. and end with a ".com" suffix; for example, www.yahoo.com. Extra Credit: If your regex also supports other high-level domain names, such as .edu, .net, etc. (for example, www.foothill.edu).
   e) Match a street address according to your local format (keep your regex general enough to match any number of street words, including the type designation). For example, American street addresses use the format: 1180 Bordeaux Drive. Make your regex flexible enough to support multi-word street names such as: 3120 De la Cruz Boulevard.

2. Create Regular Expressions that:
   a) Extract the complete timestamps from each line.
   b) Extract the complete e-mail address from each line.
   c) Extract only the months from the timestamps.
   d) Extract only the years from the timestamps.
   e) Extract only the time (HH:MM:SS) from the timestamps.

3. Write a multithread program to create 3 threads where one thread calculates the factorial and second thread calculates square and third thread calculates the summation of a list of numbers.
4. Write a python program to create two threads to count how many lines in two text files (one thread will count lines from first file and other thread from second file).
5. Write a python script that performs basic operations using MySQL database and a corresponding Python database adapter.
6. Write a python script that performs basic operations using SQLite Database and a corresponding Python database adapter
7. Write a program to demonstrate operations in Numpy.
8. Write a python program to demonstrate data indexing, selection and filtering in Pandas.
9. Write a python program to create GUI application to illustrate slider tool that controls the size of the text font in the label widget.(Greater the slider position, larger the font and vice-versa)
10. Write a python program to create GUI application to implement road signs with the appropriate foreground and background colors based on sign type stop, wait and Go signal.
11. Write a python program to create a "Comments" or "Feedback" page for a Web site. Take user feedback via a form, process the data in your script, and return a "thank you" screen.
12. Create a CGI application that not only saves files to the server's disk, but also displays the content of file back to the client.

TEXT BOOKS:

1. Core Python Programming, Wesley J. Chun, Third Edition, Pearson.
2. Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython by Wes McKinny, O'Reilly Media.
3. Elegant SciPy: The Art of Scientific Python By Nunez-Iglesias, Stefan van der Walt, Harriet Dashnow, O'Reilly Media.
4. A. Lukaszewski, MySQL for Python: Database Access Made Easy, Pact Publisher.

REFERENCE BOOKS:

1. Data Science from Scratch, 2nd Edition by Joel Grus, O'Reilly Media, Inc, May 2019.
2. Scipy and Numpy: An Overview for Developers by Eli Bressert, O'Reilly Media.

List of Equipment/Software (with Specifications or Range) Required:

1. **Python.org**

MC309HS: GENDER SENSITIZATION LAB

B.Tech. II Year I Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
MC309HS	MC	0	0	2	0	30	70	100
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 30				Total Classes: 30		

COURSE DESCRIPTION

This course offers an introduction to Gender Studies, an interdisciplinary field that asks critical questions about the meanings of sex and gender in society. The primary goal of this course is to familiarize students with key issues, questions and debates in Gender Studies, both historical and contemporary. It draws on multiple disciplines – such as literature, history, economics, psychology, sociology, philosophy, political science, anthropology and media studies – to examine cultural assumptions about sex, gender, and sexuality.

This course integrates analysis of current events through student presentations, aiming to increase awareness of contemporary and historical experiences of women, and of the multiple ways that sex and gender interact with race, class, caste, nationality and other social identities. This course also seeks to build an understanding and initiate and strengthen programmes combating genderbased violence and discrimination. The course also features several exercises and reflective activities designed to examine the concepts of gender, gender-based violence, sexuality, and rights. It will further explore the impact of gender-based violence on education, health and development.

Course Objectives:

- To develop students' sensibility with regard to issues of gender in contemporary India.
- To provide a critical perspective on the socialization of men and women.
- To introduce students to information about some key biological aspects of genders.
- To expose the students to debates on the politics and economics of work.
- To help students reflect critically on gender violence.
- To expose students to more egalitarian interactions between men and women.

Course Outcomes:

- Students will have developed a better understanding of important issues related to gender in contemporary India.
- Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
- Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
- Students will acquire insight into the gendered division of labour and its relation to politics and economics.
- Men and women students and professionals will be better equipped to work and live together as equals.
- Students will develop a sense of appreciation of women in all walks of life.
- Through providing accounts of studies and movements as well as the new laws that provide protection and relief to women, the textbook will empower students to understand and respond togender violence.

Unit -1	UNDERSTANDING GENDER	No.of Classes: 9

Introduction: Definition of Gender-Basic Gender Concepts and Terminology-Exploring Attitudes towards Gender-Construction of Gender-Socialization: Making Women, Making Men- Preparing for Womanhood. Growing up Male. First lessons in Caste.

Unit -2	GENDER ROLES AND RELATIONS	No.of Classes: 9
Two or Many? -Struggles with Discrimination-Gender Roles and Relations-Types of Gender Roles-Gender Roles and Relationships Matrix-Missing Women-Sex Selection and Its Consequences-Declining Sex Ratio. Demographic Consequences-Gender Spectrum: Beyond the Binary		
Unit -3	**GENDER AND LABOUR**	**No.of Classes: 9**
Division and Valuation of Labour-Housework: The Invisible Labor- "My Mother doesn't Work." "Sharethe Load."-Work: Its Politics and Economics -Fact and Fiction. Unrecognized and Unaccounted work.-Gender Development Issues-Gender, Governance and Sustainable Development-Gender andHuman Rights-Gender and Mainstreaming		
Unit -4	**GENDER - BASED VIOLENCE**	**No.of Classes: 9**
The Concept of Violence- Types of Gender-based Violence-Gender-based Violence from a Human Rights Perspective-Sexual Harassment: Say No! -Sexual Harassment, not Eve-teasing- Coping with Everyday Harassment- Further Reading: "Chupulu". Domestic Violence: Speaking OutIs Home a Safe Place? -When Women Unite [Film]. RebuildingLives. Thinking about Sexual Violence Blaming the Victim-"I Fought for my Life…."		
Unit -5	**GENDER AND CULTURE**	**No.of Classes: 9**
Gender and Film-Gender and Electronic Media-Gender and Advertisement-Gender and Popular Literature- Gender Development Issues-Gender Issues-Gender Sensitive Language-Gender and Popular Literature - Just Relationships: Being Together as Equals MaryKom and Onler. Love and Acid just do not Mix. Love Letters. Mothers and Fathers. Rosa Parks-The Brave Heart.		

Note: **Since it is Interdisciplinary Course, Resource Persons can be drawn from the fields of English Literature or Sociology or Political Science or any other qualified faculty who has expertise in this field from engineering departments.**

- Classes will consist of a combination of activities: dialogue-based lectures, discussions, collaborative learning activities, group work and in-class assignments. Apart from the above prescribed book, Teachers can make use of any authentic materials related to the topics given in the syllabus on "Gender".

- ESSENTIAL READING: The Textbook, "Towards a World of Equals: A Bilingual Textbook on Gender" written by A.Suneetha, Uma Bhrugubanda, Duggirala Vasanta, Rama Melkote, Vasudha Nagaraj, Asma Rasheed, Gogu Shyamala, Deepa Sreenivas and Susie Tharu published by Telugu Akademi, Telangana Government in 2015.

ASSESSMENT AND GRADING:

- Discussion & Classroom Participation: 20%
- Project/Assignment: 30%
- End Term Exam: 50%